Renewable geothermal energy holds promise, but it gets little attention

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WASHINGTON - Geologists believe Utah sits on one of the prime reservoirs of geothermal energy in the United States, an energy resource that is clean, renewable, reliable, and, to date, almost entirely untapped.

And, in a time when President Bush has called in his State of the Union Address for an aggressive expansion of renewable energy, geothermal enjoys little support from the administration.

Last week, as other renewable energy sources were the focus of major new initiatives, Bush once again proposed eliminating the Energy Department's office focused on expanding geothermal energy, just as it had last year before Western senators rallied to protect the program.

Just when the industry looks headed toward a breakthrough, says Karl Galwell, executive director of the Geothermal Energy Association, a political move jerks the opportunity away.

"I guess that makes us the Charlie Brown of renewable energy," he says.

Utah has always had abundant geothermal resources. The American Indians who lived in the region would camp along the thermal springs in the winter, and later, Mormon pioneers settled nearby. Railroads used the hot springs as a tourist attraction.

The state's geology - active fault lines and geologically recent volcanic activity - forges fractures that allow heat to seep to the surface, creating a prime zone for geothermal development that stretches from the Wasatch Mountains west to California, said Robert Blackett of the Utah Geological Survey.

The three Western neighbors - Utah, Nevada and California - are the only three states in the continental United States with operating geothermal power plants.

The plants tap the super-heated water below ground by drilling a well, similar to an oil and gas well.

The steam or water that gushes out turns turbines, producing electricity, and the water is injected back into the ground and reheated.

Utah now has just one operating plant, at Roosevelt Hot Springs near Milford, which generates about 26 megawatts of electricity.

Another plant 50 miles to the east, at Cove Fort, closed in 2004 and has since been acquired by Raser Technologies, a Provo company that plans to update the plant and sell power to PacifiCorp.

Direct geothermal energy, tapping the heat without changing it to electricity, heats the Utah State Prison; and Milgro Nurseries in Newcastle, one of the largest nurseries in the country, uses geothermal heat in its greenhouses.

Nationally, there are about 2,800 megawatts of geothermal electricity being generated, enough to power as many as 2.8 million homes.

The Western Governors Association estimates that 13,000 megawatts could be in production within 10 years, enough to replace 10 to 13 coal-fired power plants. That includes producing enough geothermal electricity in Utah to power 250,000 homes.

A new report by the Massachusetts Institute of Technology concluded that, with a reasonable research investment, geothermal could provide electricity to as many as 100 million homes within 50 years.

That could be especially crucial with a number of coal-fired power plants and nuclear plants expected to shut down over the next 25 years, the report said.

And the electricity comes without the thousands of tons of carbon dioxide, sulfur dioxide and other pollutants from coal plants, or the radioactive waste from nuclear reactors.

"It's a renewable form of energy that has some potential," said Joseph Romm, the top Energy Department official on renewable energy in President Clinton's administration.

"I think [the problem] has been a high-cost thing more than anything else. . . . I think it has one of the largest and cheapest resource bases in this country. That's pretty clear," said Romm, author of *Hell and High Water*, which looks at the threat of global warming.

Getting geothermal energy from the ground to your home can take years, primarily because there is no easy way to locate geothermal pockets without drilling.

That forces geothermal prospectors to take their best guess and sometimes punch hole after hole before hitting a reservoir. Many of those now in development were originally found accidentally while drilling oil and gas or water wells.

Sen. Orrin Hatch helped expand wind-power tax credits to include geothermal. A report by the Government Accountability Office said the tax credits may increase geothermal production by as much as 367 percent by 2017.

"We should be doing everything we can to promote geothermal energy," Hatch said. "It's a clean, renewable resource that's not affected by the price or supply of oil. Yet it makes up only 2 percent of the nation's energy consumption. So I've pushed through incentives to try to change that. Experts say Utah has one of the largest underground hot-water reservoirs in the nation, but we need these incentives - and possibly more - to fully utilize it."

What Hatch envisions is clean geothermal electricity used to power clean-running plug-in hybrids, wiping out tons of greenhouse gas emissions.

But the tax credits aside, the federal government is cool to geothermal heat.

While the Bush administration proposed $875 million for nuclear energy development, it has proposed eliminating the geothermal research.

In the past, Western senators like Hatch, Senate Majority Leader Harry Reid and Sen. Bob Bennett have salvaged funding, providing $25 million last year.

Galwell said it will take a continued commitment from the government to make geothermal power a reality.

"I think what you see is geothermal tends to be an afterthought on the East Coast," he said. "I think if Washington, D.C., was located west of the Mississippi, we would be a lot better off."

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